REMARKS

I. Status of the Application

Claims 1-24 are presently pending in the application. Claim 4 has been cancelled without prejudice to the filing of any appropriate continuation applications. Claims 1-24 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 6,258,385. Claims 1-15, 20, 21 and 23 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 14, 15 and 18-25 of U.S. Patent No. 6,485,755. Claims 8-24 stand rejected under 35 U.S.C. §112, first paragraph, as lacking enablement. Claims 1-24 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Claims 1-4, 7-9, 13, 14, 17, 20 and 22 stand rejected under 35 U.S.C. §102(b) or 35 U.S.C. §103(a) as obvious over Antelman, U.S. Patent No. 5,571,520. Claims 1-24 stand rejected under 35 U.S.C. §103(a) as obvious over Antelman, U.S. Patent No. 5,571,520, in view of DeCuellar et al., U.S. Patent No. 4,828,832, Fox Jr. et al., U.S. Patent No. 5,334,588, Dorland's (28th Ed. 1994), The Merck Manual (16th Ed. 1992), and Remington's (17th Ed. 1985).

Applicant has amended the claims to more clearly define and distinctly characterize Applicant's novel invention. The amendments to the claims can be found in the specification and the claims as originally filed. Claims 2, 3, 5, 6, 7, 9, 11 and 13 were amended to address formal matters. Support for the amendment to claim 1 to recite "preventing, treating or managing one or more dermatological skin conditions" can be found in the specification at least at page 7, lines 34-35 where Applicant teaches "compositions and methods of the invention advantageously prevent, treat, or manage dermatological diseases or conditions." Support for the amendment to claims 1 and 8 to recite "wherein the pharmaceutical composition further comprises a carrier medium that adheres to the skin" can be found in the specification at least at page 5, lines 23-24, where Applicant teaches an

"agent sufficient to increase adherence of the composition to the skin." Support for the amendment to claim 23 to recite "substantially free of added persulfate" can be found in the specification at least at page 5, line 30, where Applicant teaches "substantially free of added persulfate." Applicant respectfully submits that the amendments presented herein do not raise new issues requiring further search, and add no new matter.

Applicant submits herewith a Terminal Disclaimer to obviate the Examiner's double patenting rejection of claims 1-24 as being unpatentable over claims 1-20 of U.S. Patent No. 6,258,385 and claims 1-15, 20, 21 and 23 as being unpatentable over claims 14, 15 and 18-25 of U.S. Patent No. 6,485,755. Applicant respectfully submits that the Terminal Disclaimer renders the obviousness-type double patenting rejections moot and that claims 1-24 are allowable.

II. Claims 8-24 Are Enabled

At page 4, paragraph 1 of the instant Office Action, claims 8-24 stand rejected under 35 U.S.C. §112, first paragraph, because the Examiner asserts that the specification, while being enabling for the tetrasilver tetroxide, does not reasonably provide enablement for all pharmaceutically acceptable derivatives or treatment, prevention or management of all conditions. The Examiner is of the opinion that the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. Applicant respectfully traverses this rejection.

35 U.S.C. § 112, first paragraph requires that the specification must enable a person skilled in the art to make and use the claimed invention. However, a specification need not, and should not, disclose what is well known in the art. The invention that one skilled in the art must be enabled to make and use is that defined by the claims of the particular application. The issue of adequate

enablement depends on whether one skilled in the art could practice the claimed invention without undue experimentation. Enablement is not precluded by the necessity of some experimentation such as routine screening, even if it is extensive routine screening. Also, the fact that experimentation may be complex does not necessarily make it undue, if the art typically engages in such experimentation (MPEP 2164.01) if the level of skill in the art is high or if all of the methods needed to practice the claimed invention are well known. *In re Wands*, 8 U.S.P.Q. 2d 1400, 1406 (Fed. Cir. 1988).

> The determination of what constitutes undue experimentation in a given case requires the application of a standard of reasonableness, having due regard for the nature of the invention and the state of the art. (Citations omitted). The test is not merely quantitative, since a considerable amount of experimentation is permissible, if it is merely routine, or if the specification in question provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed. *In re Wands*, 8 U.S.P.Q. 2d at 1404.

Applicant respectfully submits that the instant specification provides ample direction and guidance to make and use the claimed invention. Applicant's claimed invention is directed to methods of preventing, treating or managing one or more dermatological skin diseases or disorders comprising administering a therapeutically effective amount of tetrasilver tetroxide, or a pharmaceutically acceptable derivative thereof, substantially free of added persulfate to the skin. The Examiner asserts that one of ordinary skill in the art would be required to perform undue experimentation in order to determine what other disease conditions would be effectively treated or managed, to determine that the dermatological skin diseases could be prevented and what derivatives would be effective for treatment, management or prevention of dermatological skin diseases.

Applicant respectfully disagrees with the Examiner's assertion. First of all, Applicant respectfully submits that pharmaceutically acceptable derivatives were well known to those of skill

in the art at the time of filing (see part III, below). Secondly, determining whether the pharmaceutically acceptable derivatives of the invention are effective for the treating, preventing or managing one or more dermatological skin disease would involve only ***routine screening***. In fact, Applicant provides ***twelve examples*** by which the efficacy of pharmaceutically acceptable derivatives could be assessed. Applicant further submits that various additional assays would be obvious to one of skill based on the level of the art.

For at least the reasons set forth above, Applicant's specification, coupled with the level of skill in the art, enables a person of skill in the art to make and/or use the claimed invention. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 8-24 under 35 U.S.C. § 112, first paragraph.

III. Claims 1-24 Are Definite

At page 5, paragraph 2 of the instant Office Action, claims 1-24 stand rejected under 35 U.S.C. §112, second paragraph as being indefinite. The Examiner is of the opinion that the claims fail to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Examiner asserts that the limitation "pharmaceutically acceptable derivative" renders the claims indefinite as it is uncertain what is and what is not included within the scope of said term and that the specification does not appear to adequately provide direction as to the same. Applicant respectfully traverses this rejection.

Applicant respectfully submits that the definiteness requirement under 35 U.S.C. § 112, second paragraph requires that the claims simply be understandable to those of skill in the art. Broad claims are not indefinite simply because they are broad. Terms used in a specification are to be accorded their ordinary and accustomed meaning unless the Applicant uses them differently. Claim

terms need not be specifically defined in an application when their meaning is clear. In the instant application where the pharmaceutical compositions prevent, treat or manage dermatological skin conditions or diseases, Applicant is entitled to the broad interpretation afforded by the term "pharmaceutically acceptable derivative."

Applicant respectfully submits that the term "pharmaceutically acceptable derivative" is readily understood as used in the claims. The Examiner has indicated that the limitation "pharmaceutically acceptable derivative" renders the claims indefinite as it is uncertain what is and what is not included within the scope of said term and that the specification does not appear to adequately provide direction as to the same. Applicant respectfully submits that the requirement that the claimed pharmaceutically acceptable derivatives prevent, treat or manage dermatological skin conditions or diseases provides sufficient clarity such that one of skill in the art would understand which pharmaceutically acceptable derivatives are inside or outside the scope of the claims, i.e., one of skill in the art would understand the metes and bounds of the claims. Furthermore, Applicant teaches that derivatives of tetrasilver tetroxide include pharmaceutically acceptable salts which are salts prepared from pharmaceutically acceptable non-toxic acids including inorganic acids, organic acids, solvates, hydrates or clathrates. Applicant teaches a variety of specific inorganic acids (page 15, line 31 to page 16, line 11).

In addition, Applicant respectfully submits that the term "pharmaceutically acceptable derivative" was well known in the art at the time of filing and would be readily understood by one of skill. See, for example U.S. Patent No. 6,455,507 (PCT publication date of December 17, 1998, set forth as Appendix A). The '507 patent teaches pharmaceutically accepted derivatives and, in fact, contains seven claims reciting pharmaceutically accepted derivatives (claims 1-7). Applicant further

submits that the term "pharmaceutically accepted derivative" is so well known that a search for the term in the specification of issued U.S. Patents yielded ***582*** hits (see Appendix B).

Accordingly, one of skill in the art would understand precisely that which Applicant is claiming. Therefore, the Examiner is respectfully requested to withdraw the rejections of claims 1-24 under 35 U.S.C. § 112, second paragraph.

IV. Claims 1-4, 7-9, 13, 14, 17, 20 and 22 Are Novel And Nonobvious Over Antelman

At page 6, paragraph 2 of the instant Office Action, claims 1-4, 7-9, 13, 14, 17, 20 and 22 stand rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Antelman, U.S. Patent No. 5,571,520. The Examiner is of the opinion that the Antelman reference expressly discloses a method of treating athlete's foot and toenail fungus, which are associated with skin chafing, skin cracking, skin itch and skin peeling, with solutions of tetrasilver tetroxide falling within the scope of Applicant's claims. The Examiner further asserts that in the alternative, the claimed invention is rendered obvious because the cited art discloses products and uses that contain the same exact ingredients/components as that of the claimed invention.

At page 6, paragraph 5 of the instant Office Action, claims 1-24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Antelman reference in view of DeCuellar et al., U.S. Patent No. 4,828,832, Fox Jr. et al., U.S. Patent No. 5,334,588, Dorland's, 28th Ed. (1994), The Merck Manual, 16th Ed. (1992), and Remington's, 17th Ed. (1985). The Examiner asserts that the claimed invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made because every element of the invention has been collectively taught by the combined teachings of the references.

Applicant respectfully traverses these rejections. Amended claim 1 and claims depending therefrom are directed to a pharmaceutical composition for preventing, treating or managing one or more dermatological skin conditions comprising a therapeutically effective amount of tetrasilver tetroxide, or a pharmaceutically acceptable derivative thereof, ***substantially free of added persulfate***, wherein the pharmaceutical composition further comprises a ***carrier medium that adheres to skin***. Amended claim 8 and claims depending therefrom are directed to a method for preventing, treating, or managing one or more dermatological skin diseases in a patient's skin, which comprises administering tetrasilver tetroxide, or a pharmaceutically acceptable derivative thereof, which is ***substantially free of added persulfate, to the skin*** in an amount and for a period of time which is therapeutically effective to treat such condition(s), wherein the pharmaceutical composition comprises a ***carrier medium that adheres to skin***. Amended claim 23 and claims depending therefrom are directed to methods for preventing, treating, or managing one or more ***non-pathogenic***, dermatological skin conditions, which comprises administering tetrasilver tetroxide, or a pharmaceutically acceptable derivative thereof, ***substantially free of added persulfate***, to the skin in an amount and for a period of time which is therapeutically effective to treat such condition(s)

Applicant's claimed invention, which is directed to a composition comprising a carrier medium that adheres to the skin (claims 1 and 8 and claims depending therefrom), imparts the benefits of inhibiting excessive runoff of the composition during use, which facilitates administration of the proper dose to the patient (see specification page 5, lines 22-25). Furthermore, Applicant has discovered that the claimed compositions, which are substantially free of added persulfate (all pending claims), are effective in treating skin conditions and do not irritate the skin when applied topically (see specification page 9, lines 17-20). This is an unexpected result as it was previously accepted in the art that silver tetroxide needed to be administered in combination with a strong

oxidizing agent, such as persulfate, in order to treat skin diseases (see specification page 9, lines 13-20).

The Antelman patent neither teaches nor suggests Applicant's claimed invention. Antelman is directed to the use of molecular crystals as bactericidal, viricidal and algicidal devices. Antelman teaches that "oxidizing agents, ***particularly persulfates***, enhance the efficacy of said devices" (column 2, lines 33-34, emphasis added). In fact, every example of topical application using a medium that adheres to skin taught by Antelman includes the use of sodium persulfate. Example 1 teaches topical application of cream comprising tetrasilver tetroxide and sodium persulfate to treat a *Staphylococcus* infection. Example 2 teaches a gynecological cream comprising tetrasilver tetroxide and sodium persulfate to treat *Candida albicans*. Antelman neither teaches nor suggests tetrasilver tetroxide compositions that adhere to the skin and are substantially free of added persulfate, as claimed by Applicant. Nor does Antelman teach or suggest Applicant's claimed method for preventing, treating, or managing one or more ***non-pathogenic***, dermatological skin conditions with a composition ***substantially free of added persulfate***. Instead, Antelman is directed to "bactericidal, fungicidal and algicidal devices" (column 1, lines 11-13) and teaches topical treatment of the following ***pathogenic*** organisms: the bacteria *Staphylococcus* (Example 1); the yeast *Candida* (Example 2); the fungus that causes athlete's foot (Example 6); and a fungus associated with toenail infection (Example 7). Thus, the Antelman patent fails to teach or suggest the claimed invention.

The secondary references fail to cure the deficiencies of the Antelman patent. De Cuellar at al. is directed to the treatment of skin lesions, particularly burns, using compositions comprising metallic silver particles in the presence of oxidizing agents (column 2, lines 33-36). De Cuellar et al. neither teaches nor suggests tetrasilver tetroxide or a pharmaceutically acceptable derivative thereof substantially free of added persulfate, as claimed by Applicant.

Fox Jr. et al. is directed to antiviral compositions comprising a combination of silver salts and biguanides (column 3, lines 23-32). Fox Jr. et al. neither teaches nor suggests tetrasilver tetroxide or a pharmaceutically acceptable derivative thereof substantially free of added persulfate, as claimed by Applicant.

Dorland's teaches that cold sores are caused by herpes simplex virus type I and that shingles is caused by herpes zoster (Office Action, page 7, last paragraph). Dorland's neither teaches nor suggests tetrasilver tetroxide or a pharmaceutically acceptable derivative thereof substantially free of added persulfate, as claimed by Applicant.

The Merck Manual teaches that warts are caused by viruses (Office Action, page 8, first paragraph). The Merck Manual neither teaches nor suggests tetrasilver tetroxide or a pharmaceutically acceptable derivative thereof substantially free of added persulfate, as claimed by Applicant.

Remington's teaches various combinations of drugs and bases. Remington's neither teaches nor suggests tetrasilver tetroxide or a pharmaceutically acceptable derivative thereof substantially free of added persulfate, as claimed by Applicant.

Thus, the Antelman reference, alone or in combination with the secondary references, fails to teach or suggest all of Applicant's claim limitations. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejections of claims 1-4, 7-9, 13, 14, 17, 20 and 22 under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Antelman, U.S. Patent No. 5,571,520.

V. Conclusion

Having addressed all outstanding issues, Applicant respectfully requests reconsideration and allowance of all pending claims. To the extent the Examiner believes that it would facilitate allowance of the case, the Examiner is requested to telephone the undersigned at the number below.

Respectfully submitted,

Dated: July 22, 2004

J. Stone-Hulslander
Judith Stone-Hulslander, Reg. No. 55,652
BANNER & WITCOFF, LTD.
28 State Street, 28th Floor
Boston, MA 02109
(617) 720-9600